

Abstract

An echelle grating is used to interleave or de-interleave two combs of signals. In a de-interleaving operation, an optical input signal having a comb of odd channels and an interleaved comb of even channels may be separated into an even-channel optical output signal and an odd-channel optical output signal by an echelle grating. The echelle grating may form an even channel output by diffracting the light in the even channels into respectively different multiple orders at a first angle relative to the input. An odd channel output is formed by diffracting the light in the odd channels into respectively different multiple orders at a second angle that is different from the first angle.